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**DMS-4500****Steel Strand, Uncoated Seven-Wire Stress-Relieved and Low-Relaxation for Prestressed Concrete***Effective Date: June 2015*

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**1. DESCRIPTION**

This Specification governs the materials of steel strand, uncoated seven-wire stress-relieved and low-relaxation for prestressed concrete and describes the qualification procedure for manufacturers to produce uncoated seven-wire steel strand for Department projects. Manufacturers must meet the requirements of this Specification. Seven-wire steel strand must be produced to the requirements of ASTM A 416.

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**2. MATERIAL PRODUCER LIST**

The Materials and Pavements Section of the Construction Division (CST/M&P) maintains the Material Producer List (MPL) of all qualified seven-wire steel strand-producing manufacturers. Only seven-wire steel strand produced by manufacturers appearing on the MPL, entitled "[Steel Strand, Uncoated Seven-Wire Stress-Relieved and Low Relaxation for Prestressed Concrete](#)," can be used on Department projects.

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**3. BIDDERS' AND SUPPLIERS' REQUIREMENTS**

Use of pre-qualified product does not relieve the Contractor of the responsibility to provide product that meets this Specification. The Department may inspect or test material at any time and reject any material that does not meet the specifications.

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**4. QUALIFICATION PROCESS**

- 4.1. **Qualification Request.** Submit a request for plant approval under DMS-4500 to [DMS\\_Prequal@txdot.gov](mailto:DMS_Prequal@txdot.gov).

Include the following information in PDF format:

- manufacturer name;
- physical and mailing addresses;
- contact person, title, phone number, and email address; and
- types (sizes, grades, etc.) of seven-wire steel strand to be furnished.

CST/M&P will contact the manufacturer to review the qualification process.

- 4.2. **Evaluation.** CST/M&P will review the qualification request. If the qualification request includes the required information, CST/M&P will perform a Department-directed plant audit and will review the following to ensure compliance:

- traceability of base rod material and finished seven-wire steel strand throughout each phase of manufacture;
- process of cold drawing of wire;
- stranding process;
- storage of finished seven-wire steel strand and proper identification methods;
- shipping records and associated documentation for completeness and accuracy;
- calibration records for all seven-wire steel strand testing equipment;

- sampling rates and testing frequencies for compliance with ASTM A 416;
- physical testing of seven-wire steel strand and certified test reports;
- manufacturer's documentation and records supporting MTRs; and
- verify D-9-PS-1 "Domestic Origin Form" and certified test reports accompany each shipment of seven-wire steel strand to Department projects.

4.3. **Sampling.** The Department or a Department representative will select two sets of samples in accordance with Tex-710-I: a primary set and a comparison set. The Department representative will select all comparison samples from the same coil/reel or production line as the primary set, unless otherwise approved.

#### 4.4. **Testing (ASTM A 416).**

##### 4.4.1. **Manufacturer-Tested Samples.**

- Test the primary set of samples in accordance with ASTM A 416 in the presence the Department representative, and record test results on the appropriate Department worksheet. If the samples meet specification, package and ship the second set of samples in accordance with Tex-710-I for CST/M&P comparison testing. Include the Department worksheet and corresponding certified test report.
- If the primary samples fail to meet specification, the Department representative will select an additional set of representative samples from the same heat/lot for manufacturer testing. If both of these samples meet specification, package and ship the comparison samples to CST/M&P in accordance with Tex-710-I.
- If either of the two additional samples fails to meet specification, the qualification process will stop. Do not ship comparison samples to CST/M&P. The qualification process may continue after the manufacturer makes the necessary adjustments to production and/or QC processes that result in specification compliance.

##### 4.4.2. **Department-Tested Comparison Samples.**

- If the samples meet specification, CST/M&P will use the test results as information to determine the acceptability of the manufacturer.
- If the samples fail to meet specification, CST/M&P will contact the manufacturer to arrange for additional representative samples and conduct a re-test.
- The qualification process will stop if either of the two additional samples fails to meet specification.

4.5. **Evaluation.** CST/M&P will notify the manufacturer upon completion of the audit.

4.5.1. **Qualification.** If the audit verifies compliance with this Specification, CST/M&P will list the manufacturer on the MPL. Manufacturers must immediately notify the Department when changes to plant management/ownership or the contact person occur.

Seven-wire steel strand manufacturers will be qualified for 2 years and must submit interim samples upon request to maintain qualification status. CST/M&P will notify manufacturers when interim samples are due.

4.5.2. **Failure.** Seven-wire steel strand manufacturers that fail to qualify under this Specification may not furnish seven-wire steel strand to Department projects. Manufacturers must adequately correct all deficiencies prior to being reconsidered for qualification.

4.6. **Random Inspection and Testing.** The Department reserves the right to inspect, sample, test, conduct random audits, and review documentation at any time to ensure compliance with this Specification. Provide facilities and safe access to allow for inspection of materials, the manufacturing processes, and the finished product.

- 4.7. **Disqualification.** Any manufacturer who fails to comply with the requirements of this Specification is subject to removal from the MPL, is prohibited from furnishing material to Department projects, and may not bid any work for a minimum of 30 days from the date of disqualification, or as determined by CST/M&P.

Causes for disqualification and removal from the MPL may include, but are not limited to:

- failure to comply with the conditions, procedures, and requirements of this Specification;
- falsifying information on D-9-PS-1 "Domestic Origin Form" and/or certified test reports; or
- failure to consistently produce seven-wire steel strand that meets the requirements of this Specification.

- 4.8. **Re-Qualification.** Disqualified manufacturers may begin the re-qualification process no earlier than 1 year from the date of removal from the MPL, or as determined by CST/M&P.

The manufacturer must bear all Department expenses associated with re-qualification.

- 4.9. **Inactive Manufacturer.** If a manufacturer fails to furnish seven-wire steel strand to Department projects during the 2-year qualification period, CST/M&P may remove the manufacturer from the MPL due to inactivity.

CST/M&P will consider future qualification after the manufacturer indicates it will furnish material to Department projects and complies with this Specification.

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## 5. SHIPPING

- 5.1. **Strand Identification.** Affix identification tags on each coil/reel to include the following:

- strand manufacturer's name and location of manufacture;
- strand diameter;
- grade;
- modulus of elasticity;
- heat number;
- coil/reel number;
- coil/reel length and
- identification that the coil/reel was manufactured in the USA.

- 5.2. **Documentation Required with each Shipment.** Provide a signed and notarized original Form D-9-PS-1 "Domestic Certification Form," and a certified test report indicating the finished product meets the physical requirements of ASTM A 416 with each shipment. Maintain copies of this documentation and make available to the Department upon request.

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## 6. ARCHIVED VERSIONS

Archived versions are available.